

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED JET OIL PRODUCERS,
INC.COLINE NUMBER 4 WELL PAD AND ACCESS ROAD IN THE SAM
HOUSTON NATIONAL FOREST, SAN JACINTO COUNTY, TEXAS

By

William E. Moore and Michael R. Bradle

Brazos Valley Research Associates

Contract Report Number 47

1996

AN ARCHAEOLOGICAL SURVEY OF THE PROPOSED JET OIL PRODUCERS, INC.
COLINE NUMBER 4 WELL PAD AND ACCESS ROAD IN THE SAM HOUSTON
NATIONAL FOREST, SAN JACINTO COUNTY, TEXAS

Principal Investigator: William E. Moore, SOPA

Brazos Valley Research Associates

Project Number BVRA 96-10

Prepared for

Jet Oil Producers, Inc.
Post Office Box 930
Coldspring, Texas 77331

Prepared by

Brazos Valley Research Associates
813 Beck Street
Bryan, Texas 77803

ABSTRACT

An archaeological survey of the proposed Coline Number 4 well location site (2.2 acres) and access road (900 feet) was conducted by Brazos Valley Research Associates on November 10, 1996. This project was conducted for Jet Oil Producers, Inc. of Coldspring, Texas. The project area is located in the Sam Houston National Forest, south-central San Jacinto County, Texas. This investigation was performed using the pedestrian survey method supported by shovel testing and probing. No prehistoric or historic sites were found. It is recommended that construction of the well pad and access road be allowed to proceed, as planned, and monitoring during construction by an archaeologist is not considered necessary.

ACKNOWLEDGMENTS

Brazos Valley Research Associates is grateful to those whose cooperation made the completion of this project possible. Richard Hughart of Jet Oil Producers, Inc. served as our land contact and visited the project area to ensure the proper areas were examined and provided the survey crew with topographic maps and aerial photographs. Michael R. Bradle of American Archaeology Group in Lampasas, Texas served as the Project Archaeologist and was assisted by Dwight R. Cropper. Joe Pridgen of Pridgen Land Surveyors accompanied the field survey crew, helped the crew find the various areas to be examined, and provided the dimensions of the various segments of the project area. The Principal Investigator is especially grateful to the field crew for the long hours they worked over the weekend. Carolyn Spock, Head of Records, at the Texas Archeological Research Laboratory, is thanked for checking the site files for previously recorded sites. We are also grateful to John E. Ippolito, Wally Kingsbrough, and Velicia Hubbard of the United States National Forest, Lufkin District, for their assistance. Lili Lyddon prepared the figures that appear in this report.

CONTENTS

ABSTRACT	ii
ACKNOWLEDGMENTS	iii
INTRODUCTION.....	1
ENVIRONMENTAL SETTING	5
ARCHAEOLOGICAL BACKGROUND	6
FIELD METHODS	9
RESULTS AND CONCLUSIONS	10
RECOMMENDATIONS	11
REFERENCES CITED	12

Appendix I: Shovel Test Log

FIGURES

Figure 1. General Location Map	2
Figure 2. Project Area Map	3
Figure 3. Plan of Proposed Well Pad and Access Road	4

INTRODUCTION

Jet Oil Producers, Inc. of Coldspring, Texas plans to construct a well pad and access road in the Sam Houston National Forest, south-central San Jacinto County, Texas (Figure 1). The project area is located in the 2556 acre Foster Minerals lease that is part of the James Rankin survey (Abstract 40) and is depicted on the 7.5' U.S.G.S. topographic quadrangle Coldspring, dated 1960 and photorevised in 1976 (Figure 2). The U.T.M. coordinates for the approximate center of the well pad are Northing 33 78 950 and Easting 2 89 850.

The size of the well pad is 2.2 acres, and the length of the access road is approximately 900 feet. The road connects the proposed Coline Number 4 well with Jet Oil Producers, Inc. existing Coline Number 3 Well (Figure 3).

This area is the property of the United States Forest Service, United States Department of Agriculture and is administrated through the New Waverly District office (Region 8). Wally Kingsborough is the District Archaeologist, and John E. Ippolito (Forest Heritage Program Manager), is the Forest Service archaeologist for each of the four National Forests in Texas.

The project area is surrounded by several drainages. These include Spring Branch, approximately 1200 meters due west of the center of the well pad site; the East Fork of the San Jacinto River (the major drainage in the area), approximately 3400 meters due east of the center of the well pad site; and Miller Creek (a major tributary of the San Jacinto River), approximately 2500 meters due north of the center of the well pad site. The closest stream, according to the topographic map, is an unnamed intermittent tributary of the East Fork of the San Jacinto River approximately 50 meters due east of the center of the well pad site. The topographic position of the project area is the eastern slope of a sandy ridge overlooking this tributary.

Overall, the project area is situated within an area containing numerous dry stream channels and sandy ridges. Previous archaeological surveys in the vicinity of the current project area have identified both prehistoric and historic sites and the county contains several significant archaeological sites. Therefore, an archaeological survey was required by the State Historic Preservation Officer (S.H.P.O.), the lead review and compliance agency, before construction of the well pad and access road is allowed to proceed. In order to satisfy this requirement, Jet Oil Producers, Inc. contracted with Brazos Valley Research Associates (BVRA) to perform this service. The project number assigned by Brazos Valley Research Associates is BVRA 96-10. No permit from the Texas Antiquities Committee was required for this project. The project area is part of the Coline Oil Field. Overall, this area has been the locus of intensive oil and gas exploration as indicated by oil and gas wells, pipelines, and access roads on the topographic quadrangle. The project area is situated in the south-central portion of San Jacinto County, south of the small community of Evergreen. The main highway in the area is F.M. 945 which runs north-south and, at one point, is approximately 950 meters due east of the center of the proposed well pad location.

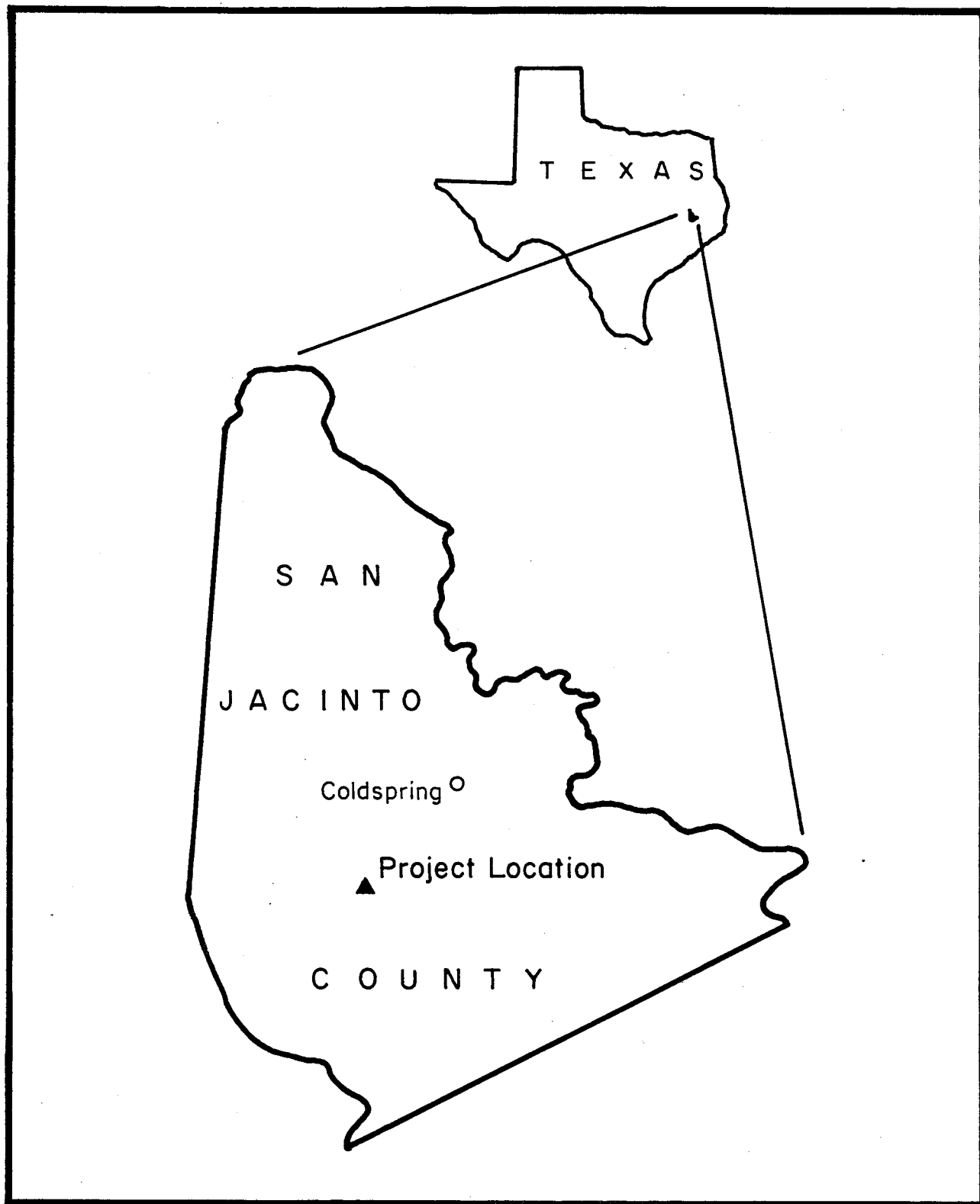


Figure 1. General Location Map.

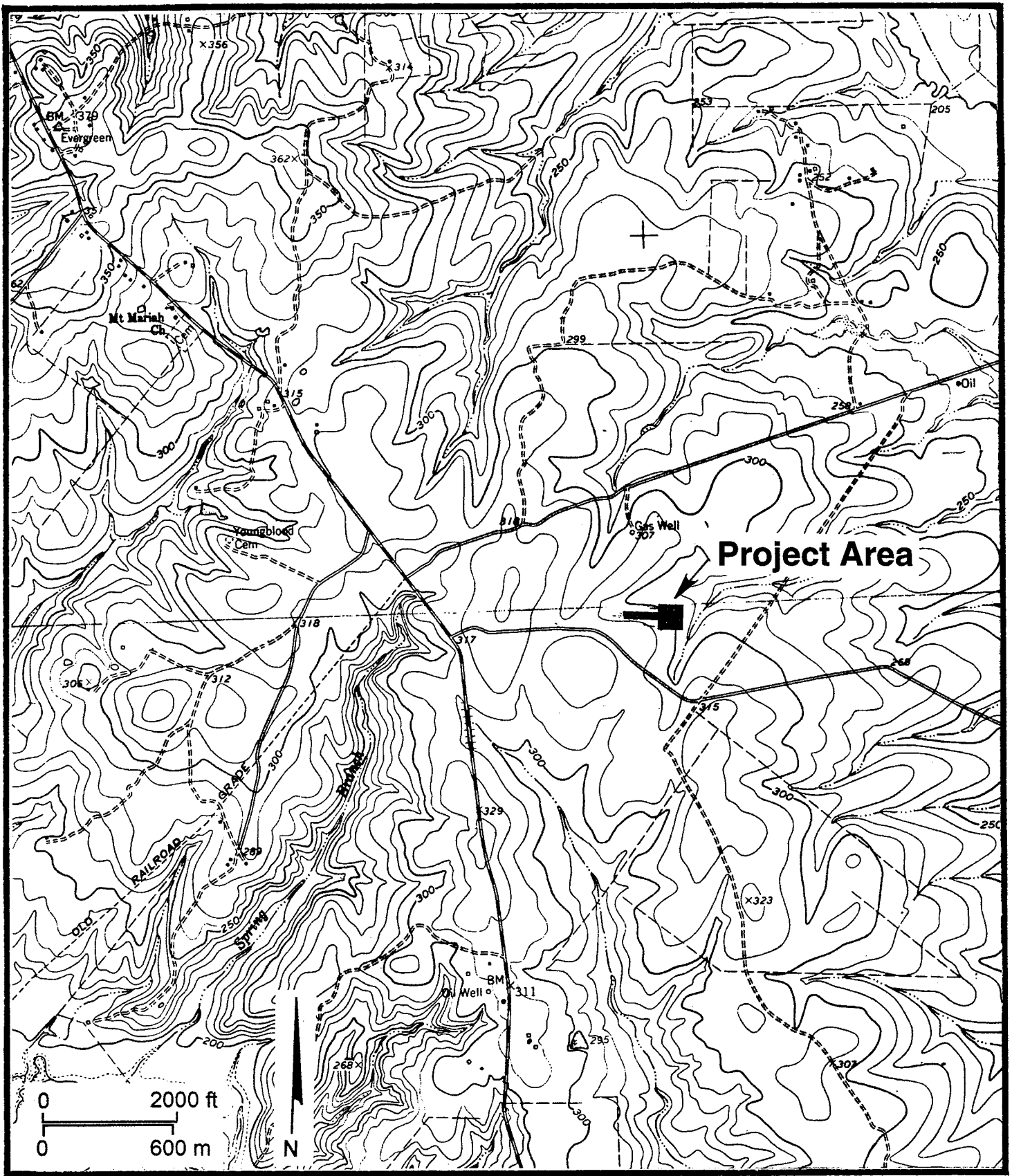


Figure 2. Project Area Map.

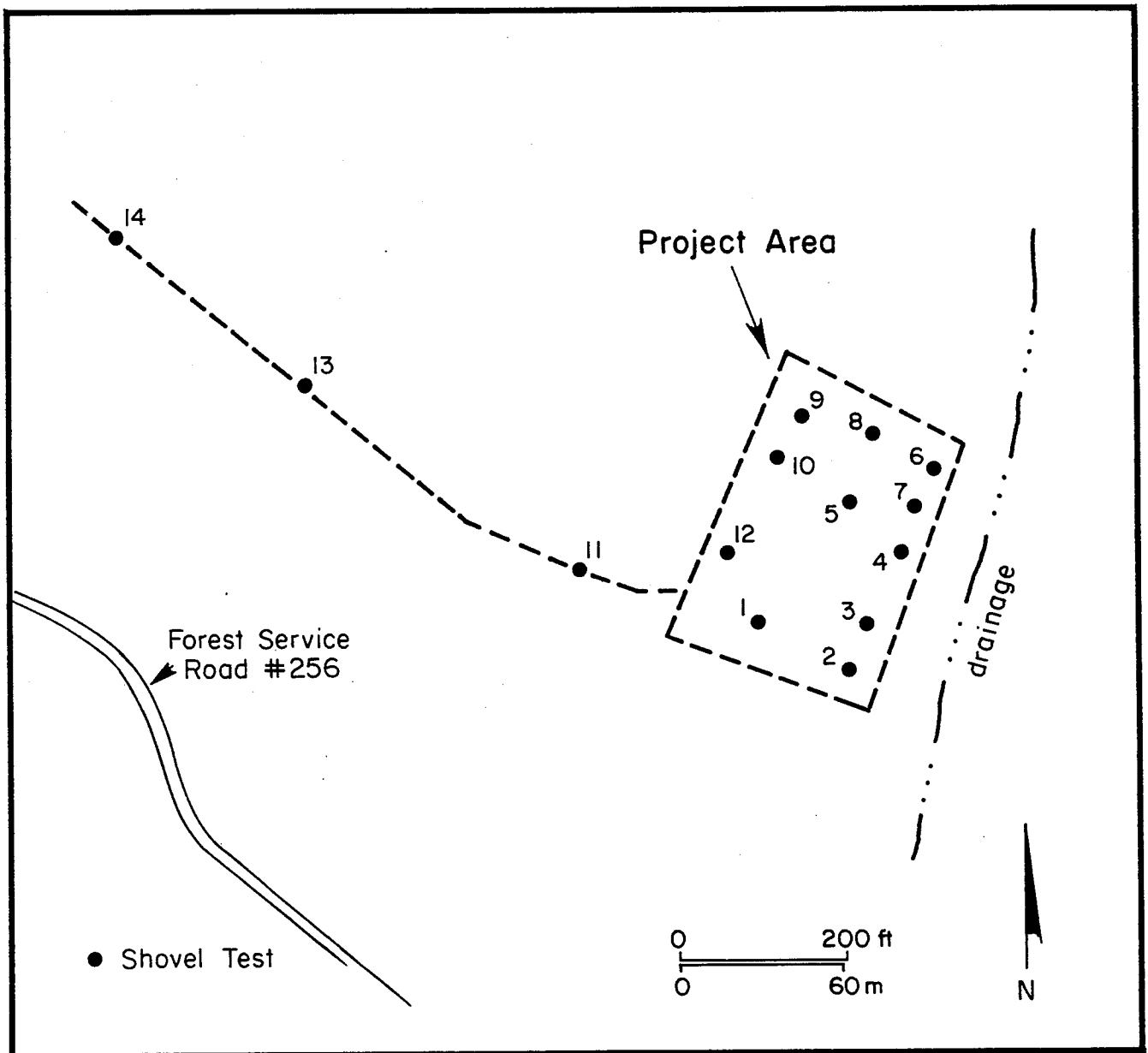


Figure 3. Plan of Proposed Well Pad and Access Road.

ENVIRONMENTAL SETTING

General

The project area is located within the West Gulf Coast Plain physiographic province and the Austroriparian biotic province as defined by Blair (1950:98-100). The overstory vegetation in the project area is primarily large pines and hardwoods, while the understory consists of various shrubs and forbs. A more detailed discussion of the environmental setting for the Sam Houston National Forest is presented in Ippolito's (1983) thorough overview of Texas National Forests. The surface geology is the Willis Formation which consists of various sands and clays containing some small gravels. The reader is referred to Volume I (Stratigraphy) of the Geology of Texas by Sellards et al. (1932) for a more in-depth discussion of the geology of this area. In terms of its topographic setting, the well pad and access road are on the slope of a sandy upland ridge overlooking an unnamed tributary of the East Fork of the San Jacinto River.

Soils

The project area is depicted in the soils book for San Jacinto County (McEwen et al. 1988) on Sheet Number 75. The entire project area is within Pinetucky fine sandy loam (PfB), 1 to 5 percent slopes. Pinetucky fine sandy loam is a gently sloping soil found on broad, smooth, upland plains (McEwen et al. 1988:37-38). This soil typically has a fine sandy loam surface layer about 12 inches thick and a subsoil of yellowish-brown sandy clay loam about 28 inches deep. Below this is a yellowish-brown sandy clay loam with a depth of 56 inches. This soil is moderately well drained and runoff is slow to medium. Seasonal wetness and moderately slow permeability are seen as major limitations to modern use including recreation.

ARCHAEOLOGICAL BACKGROUND

Previous Investigations

San Jacinto County is located in the Southeast Texas region as defined by Biesart et al. (1985:76) in *Prehistoric Archeological Sites in Texas: A Statistical Overview* published by the Office of the State Archeologist, Texas Historical Commission. This is an area that was well documented in terms of numbers of sites in 1985 when compared to other regions of Texas. When the statistical overview was compiled, a total of 1630 prehistoric sites (8.06% of the state) was recorded in the entire region. Only four of the thirteen regions in Texas reported more sites or had a higher percentage statewide. Only two counties, Chambers (240) and Harris (300), had more recorded sites in 1985 (Biesart et al. 1985:88). The 132 sites recorded in San Jacinto County in 1985 consisted of 8.10% of the region and .65% of the state. The reader is referred to the overview for additional statistical information concerning San Jacinto County and its relation to the rest of Texas.

Although numerous archaeological investigations have been conducted in San Jacinto County, the vast majority has been small area surveys, often resulting in negative findings. Many of these investigations resulted from the demand placed on the landscape by the oil and gas industry. A bibliography of the Southeastern Region of Texas by William E. Moore (1989) contains a listing of all work done in San Jacinto County through 1989. In addition, an ongoing project sponsored by the Department of Antiquities Protection, Texas Historical Commission is engaged in abstracting contract reports by year. To date, volumes have been published for 1987 (Moore 1991), 1988 (Moore 1990a), 1989 (Moore 1993a), 1990 (Moore 1992a), 1991 (Moore 1992b), and 1992 (Moore 1994a).

Two overviews of the archaeology of the National Forests of Texas have been published. In 1979, Ross C. Fields (1979) prepared a report that discussed the cultural resources of each forest. This was followed by Ippolito's (1983) more extensive work. Ippolito's effort provides a comprehensive discussion of the archaeology of all four forests and is the most recent and thorough review of the archaeology of the Texas national forests available.

The first major archaeological investigation to be conducted in San Jacinto County was survey and testing in the Livingston Reservoir. The initial survey was conducted in 1963 by the Texas Archeological Salvage Project (TASP) and recorded sites within and adjacent to the proposed lake. Most of the sites located were found to occur towards the southeastern end of the lake. The results of the survey have been reported by Nunley (1963).

Two of the sites found during the Lake Livingston survey in San Jacinto County were tested in 1965. These were the Trichel site (41SJ16) excavated by TASP personnel and the Houston site (41SJ19) excavated by members of the Houston Archeological Society. Both sites have been classified as Late Archaic to Late Prehistoric in age based on the presence of dart points, arrow points, and ceramics.

The only other prehistoric site to be excavated in San Jacinto County is the Strawberry Hill site (41SJ160). This site was investigated by the Texas Highway Department in 1974 (Keller and Weir 1979). Strawberry Hill yielded a large quantity of artifacts but, according to the authors, produced little new information. It is described as a multi-component site containing both Archaic and Late Prehistoric materials.

A historic Indian site in San Jacinto County dating to the mid-nineteenth century was excavated by Dick Ping Hsu (1969) through the combined efforts of the Houston Archeological Society, science students of Coldspring High School, the Texas Building Commission, and the Texas Water Development Board. Glass trade beads and silver brooches had never been reported from this section of Texas, and the presence of burials and other historic and native manufactured artifacts make this a very significant site. It is hypothesized by Hsu (1969:47) that the "Alabama-Coushatta was probably the group that buried their dead in this location."

It is beyond the scope of this negative findings report to discuss every archaeological investigation in the Sam Houston National Forest. Several recent efforts, however, are worthy of mention. These include three surveys of well pad sites in the Mercy Oil Field in 1992 by James E. Corbin (1992) and Brazos Valley Research Associates (Moore 1993b, 1994b) and three surveys of well pad sites in the Coldspring Oil Field by James E. Corbin (1994) and Brazos Valley Research Associates (Moore and Bradle 1996a, 1996b). The 1993 study by Brazos Valley Research Associates recorded prehistoric site 41SJ48, and the 1994 study by Corbin recorded prehistoric site 41SJ49. The 1996 surveys by Brazos Valley Research Associates were negative in terms of locating prehistoric and/or historic sites. In 1994, the Coline #3 well that is adjacent to the proposed well pad discussed in this report was investigated by archaeologists from the New Waverly District and no sites were found (John E. Ippolito, personal communication, November 14, 1996).

Most recently, three major works have appeared which contain detailed overviews relevant to Southeast Texas and the project area. These are *Archeology in the Eastern Planning Region, Texas: A Planning Document* by the Department of Antiquities Protection (Kenmotsu and Perttula (1993), Roger G. Moore's (1995) Ph.D. dissertation entitled *The Mossy Grove Model of Long-Term Forager-Collector Adaptations in Inland Southeast Texas*, and Volume 66 of the *Bulletin of the Texas Archeological Society*. The latter reviews the current state of Archeology in Texas and contains a chapter devoted to Southeast Texas (Patterson 1995).

Cultural Chronology

The cultural chronology of this part of Texas is, according to Story (1981), by no means completely understood. Other researchers such as Aten (1983), Bement et al. (1987), Bond and Moore (1980), Ippolito (1983), Keller and Weir (1979), Moore (1978, 1990b), Patterson (1979a, 1979b, 1979c, 1983, 1986, 1989), Shafer and Stearns (1975), Shafer et al. (1975), Story (1974, 1981), Story et al. (1990), and Wheat and Gregg (1988) have discussed the chronology of Southeast Texas and the Texas National Forests in more detail and the reader is advised to consult these sources for additional information.

FIELD METHODS

The project was divided into three phases - background and archival research, field survey, and report preparation. The background and archival research consisted of a check of the site records at the Texas Archeological Research Laboratory (TARL). The Principal Investigator performed this task.

Background and Archival Research

A check of the site records at TARL was conducted to identify any previously recorded sites, if any, in the project area. In order to better understand the nature of previous archaeological work in the region, the archival research included a review of the following documents: a statistical overview of Texas archaeology prepared by the Texas Historical Commission (Biesaart et al. 1985), an overview of the National Forests in Texas by Forest Service Archeologist, John E. Ippolito (1983) a bibliography of Southeast Texas (Moore 1989), several contract reports documenting work in the Sam Houston National Forest (Moore 1993b, 1994b), and a series of reports containing abstracts for Texas contract archaeology (Moore 1990a, 1991, 1992a, 1992b, 1993a, 1994a). In addition, John Ippolito was asked about possible sites in the project area that might not be in the site files at TARL.

Field Investigation

The field investigation was conducted on November 10, 1996. Michael R. Bradle was the Project Archaeologist. He supervised the fieldwork with assistance from Dwight R. Cropper. A 100% pedestrian survey was conducted across the entire project area. Shovel tests were excavated at the well pad and along the access road. In all, 14 shovel tests were dug. Excavated matrix was screened through 1/4 inch hardware cloth. Shovel test data were recorded on a shovel test log (Appendix I) and in the field notes. Tests were dug until clay was encountered. Depths of the tests varied from 34 to 68 centimeters below the ground surface, and the average depth was calculated at 49.71 centimeters. In addition to the shovel testing, all exposed areas in the project area were inspected for cultural materials, and 22 shovel probes were excavated; all were negative. No artifacts were collected during the course of this investigation.

Report Preparation

The Principal Investigator and Project Archaeologist performed this task inhouse. A draft report prepared for review by the Department of Antiquities Protection, Texas Historical Commission; the United States Forest Service; and Jet Oil Producers, Inc. A copy of the report, all notes, shovel test forms, and other records are on file at Brazos Valley Research Associates.

RESULTS AND CONCLUSIONS

This survey did not locate any prehistoric or historic sites within the project area. Much of the area examined had been previously disturbed through logging, oil and gas well pads, and access road construction. Although portions of the project area appears, based on the topographic map, to be likely settings for prehistoric sites, the lack of such sites could be, in part, due to the shallow, moderately well drained soils with slow to medium runoff (see *Environmental Setting* above). The archival research conducted for this and other projects in the Sam Houston National Forest indicates that prehistoric sites in the area are typically found on landforms with deep well-drained sandy soils such as 41SJ48 south of the current project area, located by Brazos Valley Research Associates (Moore 1993b), and 41SJ49 west of the project area on a sandy ridge above the floodplain of the East Fork of the San Jacinto River located by Corbin (1994). Site 41SJ48 is on a sandy ridge in Splendora very fine sandy loam (SpA) as defined by McEwen et al. 1988:11), and site 41SJ49 is believed by Corbin to be in Doucette loamy fine sand (DoB). Both site areas contained sandy loam to depths of at least 90 centimeters.

An apparent lack of a permanent water source in part of the project area is viewed as a major reason for the absence of sites in the area surveyed. The combination of an absence of natural springs in the area, as stated by Mr. Hughart, and the fact that much of this area is drained by intermittent streams that contain only seasonal flow should be considered. It should also be noted that much of the area examined was in topographical settings not typically utilized by prehistoric groups and that, should sites exist, the chance of *in situ* deposits is low given the amount of previous disturbance.

RECOMMENDATIONS

No significant cultural resources were found during the archaeological survey documented in this report. It is, therefore, recommended that Jet Oil Producers, Inc. be allowed to proceed with construction of the Coline Number 4 well pad and access road as planned. The presence of an archaeologist to act as monitor during the construction phase is not considered necessary. There is always the possibility that cultural materials or features are missed during the course of any archaeological survey. Should the presence of cultural materials not discussed in this report be discovered during construction, the client is advised to cease work and contact the State Historic Preservation Officer immediately. In addition, the Forest Service archaeologist should be advised of the situation.

REFERENCES CITED

- Aten, Lawrence E.
1983 *Indians of the Upper Texas Coast*. Academic Press.
- Bement, Leland C., Rolfe D. Mandel, Jesus F. de la Teja, Dan K. Utley, and Solveig A. Turpin
1987 *Buried in the Bottoms: The Archeology of Lake Creek Reservoir, Montgomery County, Texas*. Texas Archeological Survey, Research Report 97.
- Biesaat, Lynne A., Wayne R. Roberson, and Lisa Clinton Spotts
1985 *Prehistoric Archeological Sites in Texas: A Statistical Overview*. Texas Historical Commission, Office of the State Archeologist, Special Report 28.
- Blair, W. Frank
1950 The Biotic Provinces of Texas. *The Texas Journal of Science* 2(1):93-117.
- Bond, Clell L., and William E. Moore
1980 *Archeological Investigations in the Davy Crockett National Forest*. Texas A&M University, Cultural Resources Report Number 1.
- Corbin, James E.
1992 *Archaeological Survey of the Proposed Royal Oil and Gas Corporation Proposed Central Coal and Coke No. 1-B Well and Access Road, Sam Houston National Forest, San Jacinto County, Texas*. Archaeological Survey Report Number 92-7.
- 1994 *Archaeological Survey of the Famcor Oil, Inc. Proposed Foster D-12 Well, Flow Line and Access Road, Sam Houston National Forest, San Jacinto County, Texas*. Archaeological Survey Report Number 94-16.
- Fields, Ross C.
1979 *Cultural Resources of the Davy Crockett, Sam Houston, Angelina, and Sabine National Forests of Texas*. Prepared for the United States Forest Service.
- Hsu, Dick Ping
1969 *The Arthur Patterson Site, A Mid-Nineteenth Century Site, San Jacinto County, Texas*. Texas State Building Commission and Texas Water Development Board, Archeological Survey Report Number 5.

- Ippolito, John E.
1983 *A Cultural Resource Overview of the National Forests in Texas.* United States Department of Agriculture, Forest Service, Southern Region. Lufkin.
- Keller, John Esten, and Frank A. Weir
1979 *The Strawberry Hill Site.* Texas State Department of Highways and Public Transportation, Highway Design Division, Publications in Archaeology, Report Number 13.
- Kenmotsu, Nancy Adele, and Timothy K. Perttula
1993 *Archeology in the Eastern Planning Region, Texas: A Planning Document.* Department of Antiquities Protection, Cultural Resource Management Report 3. Texas Historical Commission.
- McEwen, Harry, Kirby Griffith, and Jesse D. Deshotels
1988 *Soil Survey of Polk and San Jacinto Counties, Texas.* Published by the United States Department of Agriculture, Soil Conservation Service, in cooperation with the United States Department of Agriculture, Forest Service, and the Texas Agricultural Experiment Station.
- Moore, Roger G.
1995 *The Mossy Grove Model of Long-Term Forager-Collector Adaptations in Inland Southeast Texas.* Unpublished Doctoral dissertation, Department of Anthropology, Rice University.
- Moore, William E.
1978 *A Synthesis of the Archeology of Southeast Texas.* Unpublished manuscript on file at the Texas Archeological Research Laboratory. Austin.
- 1989 *Archeological Bibliography for the Southeastern Region of Texas.* Texas Historical Commission, Office of the State Archeologist, Special Report 31.
- 1990a *Abstracts in Texas Contract Archeology 1988.* Texas Historical Commission, Department of Archeological Planning and Review, Abstracts in Texas Contract Archeology 1.
- 1990b *Archaeological Testing at the Derrick Adams Site (41WA100): A Late Prehistoric Site in Walker County, Texas.* Brazos Valley Research Associates, Contributions in Archaeology Number 1.

Moore, William E. (continued)

- 1991 *Abstracts in Texas Contract Archeology 1987*. Texas Historical Commission, Department of Archeological Planning and Review, Abstracts in Texas Contract Archeology 2.
- 1992a *Abstracts in Texas Contract Archeology 1990*. Texas Historical Commission, Department of Archeological Planning and Review, Abstracts in Texas Contract Archeology 3.
- 1992b *Abstracts in Texas Contract Archeology 1991*. Texas Historical Commission, Department of Antiquities Protection, Abstracts in Texas Contract Archeology 4.
- 1993a *Abstracts in Texas Contract Archeology 1989*. Texas Historical Commission, Department of Antiquities Protection, Abstracts in Texas Contract Archeology 5.
- 1993b *An Archaeological Survey of the Proposed Royal Oil and Gas Corporation Central Coal and Coke Number 2-B Well and Access Road, Sam Houston National Forest, San Jacinto County, Texas*. Brazos Valley Research Associates, Contract Report Number 26.
- 1994a *Abstracts in Texas Contract Archeology 1992*. Texas Historical Commission, Department of Antiquities Protection, Abstracts in Texas Contract Archeology 6.
- 1994b *An Archaeological Survey of the Proposed Royal Oil and Gas Corporation Foster Minerals D-1 Well and Access Road in the Sam Houston National Forest, San Jacinto County, Texas*. Brazos Valley Research Associates, Contract Report Number 31.

Moore, William E., and Michael R. Bradle

- 1996a *An Archaeological Survey of the Proposed Famcor Oil, Inc. Well Pads, Access Road, Pipeline Routes, Electrical Line, and Telephone Line in the Sam Houston National Forest, South-Central San Jacinto County, Texas*. Brazos Valley Research Associates, Contract Report Number 46.

Moore, William E., and Michael R. Bradle (continued)

- 1996b *An Archaeological Survey of the Proposed Famcor Oil, Inc. Well Pads and Pipeline in the Sam Houston National Forest, San Jacinto County, Texas*. Brazos Valley Research Associates, Contract Report Number 45.

- Nunley, John P.
1963 *Appraisal of the Archeological Resources of the Livingston Reservoir, Polk, San Jacinto, Trinity, and Walker Counties, Texas.* Report submitted to the National Park Service by the Texas Archeological Salvage Project, The University of Texas at Austin.
- Patterson, Leland W.
1979a Archeological Summary of the Upper Texas Coast. *La Tierra* 6(4):30-35.

1979b Archeological Surveys and Settlement Patterns on the Upper Texas Coast. *Journal of the Houston Archeological Society* 65:2-8.

1979c A Review of the Prehistory of the Upper Texas Coast. *Bulletin of the Texas Archeological Society* 50:103-123.

1983 Prehistoric Settlement and Technological Patterns in Southeast Texas. *Bulletin of the Texas Archeological Society* 54:253-269.

1986 Prehistoric Population Dynamics of Southeastern Texas. *Bulletin of the Texas Archeological Society* 57:117-121.

1989 The Status of Research on the Prehistory of Southeast Texas. *Journal of the Houston Archeological Society* 93:10-14.

1995 The Archeology of Southeast Texas. *Bulletin of the Texas Archeological Society* 66:239-264.
- Sellards, E. H., W. S. Adkins, and F. B. Plummer
1932 *The Geology of Texas, Volume I, Stratigraphy.* The University of Texas, Bureau of Economic Geology, Bulletin 3232.
- Shafer, Harry J., and Thomas B. Stearns
1975 *Archeological Investigations at the Scotts Ridge Site (41MQ41), Montgomery County, Texas.* Texas A&M University, Anthropology Laboratory, Report 17.
- Shafer, Harry J., Edward P. Baxter, Thomas B. Stearns, and James Phil Dering
1975 *An Archeological Assessment of the Big Thicket National Preserve.* Texas A&M University, Anthropology Laboratory, Report 19.
- Story, Dee Ann
1974 The Archaic of East Texas. In *The Texas Archaic: A Symposium*, edited by Thomas R. Hester, pp. 46-59. Center for Archaeological Research, The University of Texas at San Antonio, Special Report 2.

Story, Dee Ann (continued)

1981 An Overview of the Archaeology of East Texas. *Plains Anthropologist* 26(92):139-156.

Story, Dee Ann, Janice A. Guy, Barbara A. Burnett, Martha Doty Freeman, Jerome C. Rose, D. Gentry Steele, Ben W. Olive, and Karl G. Reinhard

1990 *The Archeology and Bioarcheology of the Gulf Coastal Plain.*
Arkansas Archeological Survey, Research Series Number 38.
Fayetteville.

Wheat, Patricia, and Richard L. Gregg (Editors)

1988 *A Collection of Papers Reviewing the Archeology of Southeast Texas.* Houston Archeological Society, Report 5.

Appendix I: Shovel Test Log

Test	Date	Depth	Diameter	Results
01*	11-10-96	34 cm	30 cm	sterile
02*	11-10-96	50 cm	30 cm	sterile
03*	11-10-96	63 cm	30 cm	sterile
04*	11-10-96	68 cm	30 cm	sterile
05*	11-10-96	35 cm	30 cm	sterile
06*	11-10-96	58 cm	30 cm	sterile
07*	11-10-96	45 cm	30 cm	sterile
08*	11-10-96	38 cm	30 cm	sterile
09*	11-10-96	48 cm	30 cm	sterile
10*	11-10-96	54 cm	30 cm	sterile
11	11-10-96	65 cm	30 cm	sterile
12*	11-10-96	46 cm	30 cm	sterile
13	11-10-96	48 cm	30 cm	sterile
14	11-10-96	44 cm	30 cm	sterile

* well pad location